CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
DRAFT
MONITORING AND REPORTING PROGRAM
ORDER NO. R5-200~~3~~5-08~~26~~XX
FOR
COALITION GROUPS
UNDER

RESOLUTION NO. R5-2003-0105
CONDITIONAL WAIVER OF
WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES FROM IRRIGATED LANDS

As conditioned by the *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Waiver) Resolution No. R5-2003-0105*, Coalition Groups shall develop a monitoring program to assess the sources and impacts of waste in discharges from irrigated lands, and where necessary, to track progress in reducing the amount of waste discharged that affects the quality of the waters of the state and its beneficial uses.

The Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) adopts this MRP pursuant to Water Code Section 13267. The Coalition Groups represent individual dischargers that discharge waste to waters of the state. The reports required by this Order are needed to evaluate impacts of discharges of waste to waters of the state and to determine compliance with the Waiver. The Regional Board Executive Officer may revise the MRP as appropriate. Coalition Groups shall comply with the MRP as revised by the Executive Officer.

The purpose of this Monitoring and Reporting Program (MRP) is to describe the minimum requirements for an acceptable Coalition Group Monitoring and Reporting Program Plan (MRP Plan). The purpose of the MRP Plan shall be to monitor the discharge of wastes in irrigation return flows and stormwater from irrigated lands that are enrolled under the Waiver. The Coalition Group shall prepare and submit to the Regional Board for review and approval by the Executive Officer an MRP Plan that meets the minimum requirements of the MRP and includes sites to be monitored, frequency of monitoring, parameters to be monitored, and documentation of monitoring protocols. The Executive Officer will review the MRP Plan to determine if it meets or exceeds the minimum requirements of this Order. The submittal of a MRP Plan is a condition of the Waiver.

The development of a science-based water quality monitoring program is critical for determining actual and potential impacts of discharges of waste from irrigated lands on beneficial uses of water in the Central Valley Region. Determining the existing ecological conditions of agriculturally dominated water bodies is a critical goal of a water

quality monitoring program and should be achieved by multiple assessment tools such as toxicity, chemical monitoring, and bioassessments.[1]

I. MONITORING AND REPORTING PROGRAM REQUIREMENTS

The Coalition Group shall submit to the Regional Board a detailed MRP Plan that supports the development and implementation and demonstrates the effectiveness of the Watershed program to comply with conditions of the Waiver.

The MRP Plan shall be designed to achieve the following objectives as a condition of the Waiver:

a. Assess the impacts of waste discharges from irrigated lands to surface water;
b. Determine the degree of implementation of management practices to reduce discharge of specific wastes that impact water quality;
c. Determine the effectiveness of management practices and strategies to reduce discharges of wastes that impact water quality;
d. Determine concentration and load of waste in these discharges to surface waters; and
e. Evaluate compliance with existing narrative and numeric water quality objectives to determine if additional implementation of management practices are necessary to improve and/or protect water quality.

In order to focus the monitoring effort in a cost effective manner, a phased process is needed for the use of various assessment tools (i.e. chemical monitoring, toxicity testing, and bioassessments). A recent conference sponsored by the California Water Institute entitled "*Understanding Surface Water Monitoring Requirements*" provides excellent guidance on the use of various monitoring tools (California Water Institute, 2002).

1. Types of Monitoring and Evaluation

To achieve the objectives of the MRP, at a minimum, the Coalition Group shall conduct the types of monitoring and evaluation listed below. The monitoring will be conducted during different phases of the monitoring and requirement program.

a. Toxicity Testing;
b. Water Quality (constituents listed in Table 1) and Flow Monitoring;
c. Pesticide Use Evaluation; and
d. Evaluation of the effectiveness of management practices and tracking levels of implementation in the watershed.

[1] *Letter to Art Baggett and Thomas Pinkos from Don Gordon, Agricultural Council of California, August 5, 2002.*

- Toxicity Testing

Activities within the watershed and the use of the receiving waters must be evaluated using aquatic toxicity testing. The purpose of the toxicity testing is to evaluate compliance with the narrative toxicity objective, to identify the causes (e.g., sediment, contaminants, salt, etc.) of toxicity observed, and to determine the sources of the toxicants identified.

- Water Quality and Flow Monitoring

Such monitoring is used to assess the sources of wastes and loads in discharges from irrigated lands to surface waters, and to evaluate the performance of management practice implementation efforts. Monitoring data shall be compared to existing numeric and narrative water quality objectives.

- Pesticide Use Evaluation

The most significant factors influencing the amount of pesticides in surface waters are the timing of pesticide applications, the application rates, the amounts of pesticide applied, and the points of application (all of these factors can be referred to as "use pattern"). This information can be found in the pesticide use reports submitted by the applicators to the County Agricultural Commissioners and Department of Pesticide Regulations (DPR). Changes in pesticide concentrations at specific monitoring sites in the waterbodies need to be compared to pesticide use patterns in land areas upstream of the monitoring sites. By comparing these changes, it may be determined how changing the pesticide use patterns could impact water quality. Changing pesticide use patterns can also provide an indicator of the degree of implementation of certain management practices.

- Management Practice Effectiveness and Implementation Tracking

Information must be collected from Dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state. Data should be collected in four broad areas; 1) pesticide mixing, loading, and application practices; 2) pest management practices; 3) management practices to address others wastes (salt, sediment, nitrogen, etc.), and 4) cultural practices. This information may be used to compare the effectiveness of management practices in reducing loading of constituents of concern.

2. Monitoring Phases

The MRP Plan shall describe a phased monitoring approach and provide documentation to support the proposed monitoring program. The program shall not consist of more than three phases. Phase 1 monitoring shall, at a minimum, include analyses of physical parameters, drinking water constituents, pesticide use evaluation, and toxicity testing. Phase 2 monitoring includes chemical analyses of constituents that were identified in toxicity testing in phase one that may include pesticides, metals, inorganic constituents and nutrients and, additional monitoring site in the watershed. Phase 3 monitoring includes management practice effectiveness and implementation tracking and additional water quality monitoring sites in the upper portions of the watershed.

A. Monitoring Phase 1

Monitoring Phase 1 shall include analyses of physical parameters, drinking water constituents, pesticide use evaluation, and toxicity testing. Phase I monitoring parameters shall include all 303(d) pollutants identified in downstream waterbody(s) and discharged to land or surface water within the watershed. Phase I monitoring parameters shall also include all pesticides listed in the Pesticide Implementation Plan contained within the Regional Board's Basin Plan if used within the watershed. General water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern in land areas upstream of the monitoring sites. This will also identify the types of pesticides used in the watershed to assist in determining the selection of appropriate species for toxicity testing. Acute toxicity testing shall be conducted using the invertebrate, *Ceriodaphnia dubia*, and the larval fathead minnow, *Pimephales promelas*, according to standard USEPA acute toxicity test methods[2]. In addition, to identify toxicity caused by herbicides, 96-hr toxicity tests with the green algae, *Selenastrum capricornutum*, shall be conducted[3]. The water column toxicity testing will be used as an indicator for wastes that are water-soluble. Sediment toxicity testing using the invertebrate species *Hyalella azteca* or *Chironomus tentans* according to USEPA methods[4] shall be conducted for hydrophobic (sediment bound) wastes that are present in the waterbody.

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[2] USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-012.
[3] USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C. EPA-821-R-02-013.
[4] USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024.

For this initial screening, 100% (undiluted) sample shall be tested. If 100% test organism mortality is detected within 24 hours during the initial screening toxicity test, then a multiple dilution test including a minimum of five sample dilutions shall be conducted to determine the magnitude of the toxic response.

~~Further, i~~If a 50% or greater difference in test organism mortality between an ambient sample (from a stream site) and the laboratory control ~~toxicity~~ is ~~detected~~ reported from either an acceptable *Ceriodaphnia dubia* (water flea) or Pimephales promelas (fathead minnow) ~~-~~during the initial toxicity screening test, then a Toxicity Identification Evaluation[5] (TIE) and chemical monitoring shall be conducted to determine the cause of toxicity. At a minimum, a Phase I TIE[6] should be conducted to determine the general class (i.e., metals, non-polar organics such as pesticides, surfactants, etc.) of chemical causing toxicity. This minimum TIE effort will determine the type of chemical monitoring necessary to identify the specific agents causing toxicity. Phase II[7] TIEs may also be utilized to identify specific toxic agents.

In addition to TIEs, sites identified, as toxic in the initial screen shall be re-sampled to estimate the duration of the toxicant in the waterbody. Additional samples collected upstream of the original site should also be collected to determine the potential source(s) of the toxicant in the watershed.

Information must be collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state through all phases of monitoring.

B. Monitoring Phase 2

Monitoring Phase 2 will include general physical parameters, pesticide use evaluation, and chemical analyses of pesticides, metals, inorganic constituents and nutrients. Phase 2 will be designed based on the results of phase 1 monitoring. It is expected that this phase will begin no later than 2 year after the start of the first phase. This phase of monitoring will include general water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen to indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern and changes in land areas upstream of the

[5] A TIE is a set of sample manipulation procedures designed to identify the specific causative agent(s) responsible for the observed toxicity.
[6] USEPA. 1998. Methods for Aquatic Toxicity Identification Evaluations. Phase I Toxicity Characterization Procedures. Office of Research and Development, Duluth, MN. EPA-600-3-88-034.
[7] USEPA. 1998. Methods for Aquatic Toxicity Identification Evaluations. Phase II Toxicity Identification Procedures. Office of Research and Development, Duluth, MN. EPA-600-3-88-035.

monitoring sites. This will also identify any additional or new pesticides used in the watershed to be monitored. Chemical analyses will be conducted in Phase 2 to assess the sources of waste and pesticide loads in discharges from irrigated lands to surface waters, and to evaluate performance of management practice implementation efforts. Wastes include the constituents that cause toxicity in Phase 1 monitoring.

Information must be collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state through all phases of monitoring.

C. Monitoring Phase 3

Phase 3 shall determine statistically significant changes in waste concentrations based on various management practices. Phase 3 monitoring shall begin no later than two years from the start of Phase 2 monitoring. This phase of monitoring will include general water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen to indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern and changes in land areas upstream of the monitoring sites. Information collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state through the previous phases of monitoring. Due to the various land use patterns and rainfall/runoff factors that can affect waste concentrations on an annual basis, it may be difficult to determine success (waste reductions) from single or multiple management practices based on only a year of sampling. Phase 3 shall determine if statistically significant changes in waste concentrations result from the implementation of various management practices. Data should be collected in four broad areas; 1) pesticide mixing, loading, and application practices; 2) pest management practices; 3) management practices to address waste (salt, sediment, nitrogen, etc.), and 4) cultural practices. This information may be used to compare the effectiveness of management practices in reducing waste loads.

Based on the results of the data collected during the three phases of monitoring, any of the above types of monitoring may be required to be repeated at a specific site or watershed.

3. Historical Data

Historical water quality data has been used for listing various water bodies as impaired. Therefore, synthesis and statistical analysis of all historical data by site and date is a

critical first step for designing a science based monitoring program in a watershed. Historical analysis will provide a benchmark for measuring change (progress) in reducing concentrations of wastes due to management practices and will provide rationale for the site selection process (i.e. continue to monitor sites with extensive temporal data for a wastes or water quality parameters). It is also possible that spatial analysis of historical data will reveal sites where data are lacking and that should be monitored in the future. Coalition Groups shall collect and review historical data for all wastes in the various watersheds in advance of developing monitoring designs. This critical initial step in developing a monitoring plan will focus the study, provide rationale for the site selection process, and reduce costs.

Coalition Groups are encouraged to review the on going monitoring in the watershed and coordinate the monitoring effort to avoid duplication.

4. Minimum Requirements

The following table lists the minimum requirements for the constituents to be monitored by the Coalition Group.

Table 1. Constituents to be monitored

Constituent	Quantitaion Limit	Reporting Unit	Monitoring Phase
Physical Parameters			
Flow	N/A	CFS (Ft^3/Sec)	Phase 1, 2 & 3
pH	N/A	pH	Phase 1, 2 &3
Electrical Conductivity	N/A	µmhos/cm	Phase 1, 2 &3
Dissolved Oxygen	N/A	mg O_2/L	Phase 1, 2 &3
Temperature	N/A	Degrees Celsius	Phase 1, 2 &3
Color	N/A	~~ADMI~~Color Unit	Phase 1, 2 &3
Turbidity	N/A	NTUs	Phase 1, 2 &3
Total Dissolved Solids	N/A	mg/L	Phase 1, 2 &3
Total Organic Carbon	N/A	mg/L	Phase 1, 2 &3
Drinking Water :			
E *Coli*	(b)	~~ug/L~~MPN/ 100ml	Phase 1
Total Organic Carbon	(b)	ug/L	Phase 1
Toxicity Test			
Water Column Toxicity			Phase 1
Sediment Toxicity			Phase 1
Pesticides [(a)]			
Carbamates	(b)	ug/L	Phase 2
Organochlorines	(b)	ug/L	Phase 2
Organophosphorus	(b)	ug/L	Phase 2
Pyrethroids	(b)	ug/L	Phase 2
Herbicides	(b)	ug/L	Phase 2
Metals (a)			
Cadmium	(b)	ug/L	Phase 2

Constituent	Quantitaion Limit	Reporting Unit	Monitoring Phase
Copper	(b)	ug/L	Phase 2
Lead	(b)	ug/L	Phase 2
Nickel	(b)	ug/L	Phase 2
Zinc	(b)	ug/L	Phase 2
Selenium	(b)	ug/L	Phase 2
Arsenic	(b)	ug/L	Phase 2
Boron	(b)	ug/L	Phase 2
Nutrients (a)			
~~Total Kjeldahl Nitrogen~~	~~(b)~~	~~mg/L~~	~~Phase 2~~
Nitrate	(b)	mg/L	Phase 2
Nitrite	(b)	mg/L	Phase 2
~~Phosphorus~~ Ortho Phosphate	(b)	mg/L	Phase 2
Potassium	(b)	mg/L	Phase 2

a In addition to TIEs, sites identified as toxic in the initial screen shall be re-sampled to estimate the duration of the toxicant in the waterbody. Additional samples upstream of the original site should also be collected to determine the potential source(s) of the toxicant in the watershed

b Quantitation limits must be lower than LC50 or other applicable federal or state toxic or risk limits.

The MRP Plan must include a sufficient number of monitoring sites and surface water flow monitoring for each location to allow calculation of the load discharged for every parameter monitored.

Method detection limits and practical quantitation limits shall be reported. All peaks detected on chromatograms shall be reported, including those, which cannot be, quantified and/or specifically identified. The Coalition Group shall use US EPA approved methods, provided the method can achieve method detection limits equal to or lower than analytical methods quantitation limits specified in this Order.

At a minimum, the MRP Plan must clearly demonstrate (1) compliance with requirement of all phases of monitoring as described in this MRP (2) sufficient number of monitoring sites based on acreages and watershed characteristics, flow monitoring, and frequency of sample collection to allow for the calculation of load discharged for every waste parameter monitored; and (3) the use of proper sampling techniques and laboratory procedures to ensure a sample is representative of the site and is performed in the laboratory using approved methodologies

Bioassessment monitoring protocols are at the developing phase and there are no Basin Plan requirements or standards addressing the results of bioassement monitoring. Coalition Groups are encouraged to conduct Bioassessments to collect data that may be used as reference sites and provide information for scientific and policy decision making in the future. Bioassessments may serve

monitoring needs through three primary functions: (1) screening or initial assessment of conditions; (2) characterization of impairment and diagnosis; and (3) trend monitoring to evaluate improvements through the implementation of management practices. Bioassessment data from all wadeable impaired water bodies may serve as an excellent benchmark for measuring both current biological conditions and success of management practices.

Watershed Specific Requirements

The watershed specific requirements include watershed constituents of concern based on the characteristics of the watershed and the receiving water quality conditions. Some watersheds may need to conduct more extensive toxicity testing if toxicity has been documented by previous monitoring or increase the number of monitoring sites. Watershed specific requirements will include follow up analyses on specific constituents of concern, e.g., specific metals or pesticides.

5. Flow Monitoring

Representative flow measurements shall be obtained at each sample location during each sampling event. Additionally, the presence or absence of flow at each sample site shall be noted at a sufficient frequency to determine the quantity discharged during the irrigation season. The MRP Plan shall record the time, date, and location of each flow measurement or observation (absences) on field data sheets. Discharge flow monitoring shall be conducted and shall be reported in cubic feet per second (cfs).

6. Monitoring Seasons

Monitoring required in Section 1 "Monitoring Types" shall be conducted during the irrigation season and storm season, which coincides with the orchard dormant spray application. In general, the irrigation season is March through August, but may start as early as February and extends to October. The storm season is December through February, but may include November and March. The MRP Plan shall describe the phased monitoring program for irrigation and storm seasons.

Each phase of monitoring shall include monitoring of two major storm events during one storm season and monthly sampling during one irrigation season followed by collection and evaluation of data. Data must be submitted to Executive Officer for review and approval. The Coalition Group shall design a monitoring phase based on the results of the previous phase. A revised MRP Plan shall be submitted for each phase for approval by the Executive Officer.

7. Monitoring Schedule

The MRP Plan shall be carried out using a systematic schedule. The MRP Plan should indicate the start date, identify time of the year, identify when field studies will take place, define the frequency of sampling, and indicate when the field studies end. Timing, duration, and frequency of sampling should be based on the complexity, hydrology, and size of the waterbody. Historical data must be reviewed to assist with determining some of these factors. The MRP Plan must include a sufficient number of monitoring sites and surface water flow monitoring for each location to allow calculation of the load discharged for appropriate parameters to achieve the objective identified in Section I. *MONITORING AND REPORTING PROGRAM REQUIREMENTS* above.

At a minimum, each phase of the above referenced monitoring shall be conducted during two major storm events and after storm events, and monthly sampling during the peak irrigation season for one year, unless otherwise approved by the Executive Officer.

8. Monitoring Sites

The MRP plan shall describe the study area, sampling sites, sampling locations, GPS coordinates, land use in the watershed, the chemicals being used, and the existing management practices in the watershed. The numbers and locations of sites must be based on specific watershed characteristics and be supported by a detailed discussion of these characteristics. Monitoring sites shall be selected for various watersheds based on size and flow of waterbodies (mainstem river, tributaries and agricultural drainage), land use (e.g.. agricultural activities and pesticide use). Monitoring sites must be established initially on the water bodies that are carrying agricultural drainage into natural waterbodies. If results indicate that water quality objectives are exceeded at any site, monitoring for the constituents of concern (constituents exceeded water quality objectives) shall continue and the monitoring must be expanded upstream in a systematic search for sources. All major drainages must be part of baseline monitoring. At least 20% of the intermediate drainages must be monitored during the first year and the second 20%, the second year, etc. Smaller drainages will be monitored if the evaluation of data from the larger drainages or receiving water indicates water quality problems. The major, intermediate and small drainages based on hydrology, size and flow of the water bodies are different for each watershed. Therefore, Coalition Groups shall provide scientific rationale for the site selection process based on historical and on-going monitoring and drainage size and land use. The size of major, intermediate and small drainages within the sub watershed shall be discussed in the MRP Plan and how the size of these drainages was used to develop the monitoring sites. Monitoring sites should not include

main-stem water bodies already on the Clean Water Act section 303(d) listed water body. These sites should be monitored only to determine the degree of implementation of management practices to reduce discharge of COC listed on 303(d). The initial focus of the MRP Plan shall be on water bodies that carry agricultural drainage or are dominated by agricultural drainage. A map showing the monitoring sites shall be provided with the MRP Plan.

II. QUALITY ASSURANCE PROJECT PLAN (QAPP)

To create a sound and consistent watershed or regional MRP Plan, it is important to develop monitoring protocols and a monitoring plan for the evaluation of water quality data. A QAPP must be developed by the Coalition Group to include watershed and site-specific information, project organization and responsibilities, and quality assurance components of the monitoring program. StateWide Ambient Monitoring Program (SWAMP) QAPP is a comprehensive quality assurance plan that includes many of the elements required under this MRP. **Attachment A** presents the MRP QAPP Requirements and the outline for development of the monitoring QAPP. The QAPP includes the laboratory and field requirements to be used for data evaluation. Coalition Groups may use the SWAMP QAPP as an available resource and add the site-specific requirements and any other elements that are required under this MRP. A Watershed specific QAPP is required to be submitted with the Watershed Evaluation Report. The Watershed Evaluation Report is a condition of the Conditional Waiver.

III. REPORTING REQUIREMENTS

Pursuant to California Water Code (CWC) Section 13267, the following Reports are required to be submitted to the Regional Board by the time schedule identified below.

A. Watershed Evaluation Report ~~DUE: 1 April 2004~~

Upon the request of the Executive Officer ~~T~~the Coalition Group shall compile and submit a Watershed Evaluation Report containing the following information:

1. Watershed Setting

- Map(s) of watershed area showing irrigated lands (including crop type), drainage and discharge locations. Maps or discussion shall provide details of the watershed showing which fields are served by each drain.
- Information on crops grown in the watershed or subwatershed area, production practices, chemicals used and application methods (including timing of application) within the watershed and other factors that may impact the quality of discharges.

- Inventory of management practices that are in place and which practices are effective pollution control measures.
- Historical water quality monitoring results Documentation of existing receiving water quality data and quality of typical irrigation discharges.
- Known water quality issues, water quality limited waterbodies, and potential water quality problems.
- Known programs addressing the water quality issues associated with discharges from irrigated lands. Discussion of practices in use and available programs to address problems from irrigated agricultural discharges (e.g. tailwater return systems, irrigation efficiency improvements, UC Coop Ext. and NRCS grower outreach, EQIP, etc.).

2. Watershed Priorities

Based on the information available, the Coalition Group shall identify its priorities with respect to work on specific subwatersheds and water quality parameters.

3. Management Practices

The Coalition Group shall be responsible for monitoring the success of identified management practices through the MRP Plan as well as the evaluation of the management practices. The report shall provide an implementation plan for management practices in the watershed. The report shall also identify pilot projects for the implementation of management practices on prioritized sub-watersheds.

3.1 Implementation Plan

The Coalition Group shall develop an implementation plan to identify and track the progress of water quality management practices within the watershed. This plan may address water quality issues related to the discharge of irrigation return flows separately from stormwater discharges and shall include a schedule for implementation of management practices that may include, but is not limited to, grower education, technical and financial assistance.

3.2 Communication Reports

When monitoring results indicate that water quality objectives are exceeded at the monitoring locations, the Coalition Group shall submit a Communication Report within 24 hours describing the exceedance and the follow-up monitoring and analysis that will be taking place. ~~in the surface~~

~~waters of the Coalition Group area, the Coalition Group shall submit a Communication Report describing how it will evaluate the effectiveness of one or more management practice(s) at preventing discharges of COCs to surface waters.~~ A follow-up to the initial Communication Report must take place within fifteen working days of the initial submittal. The follow-up Communication Report will describe the follow-up monitoring and analyses that were conducted, analytical results, and an evaluation of the effectiveness of one or more management practice(s) at preventing discharges of contaminants of concern (COCs) to surface waters. The selection of management practice evaluation projects shall include consideration of the contribution of target COCs to known water quality impairments, potential application of the management practices over a broad geographic area and large spectrum of crops, and ease and immediacy of possible implementation. Projects need not involve new practices, but can involve quantification of benefits of existing practices. The follow-up to the Communication Report shall be submitted for each proposed, implemented, or completed project and shall include, at a minimum: description of management practice(s) being evaluated, target chemical(s), reasons for selecting the specific project, methodology for evaluating the effectiveness of the practice (including sampling and QA/QC plans), and involvement by stakeholders and agencies in developing, implementing and evaluating the project. ~~If~~As projects are completed, a Final ~~the~~ Communication Report shall present the conclusion(s) of the evaluation project.

B. Monitoring and Reporting Program Plan ~~**Due: 1 April 2004**~~

Upon the request of the Executive Officer ~~T~~the Coalition Group must submit an MRP Plan that ~~must~~ includes the components of the monitoring progam as stated in this Order. The MRP Plan shall specify all quality assurance elements including the US EPA test method and detection limits for the required constituents as specified in the QAPP for Monitoring Program Requirements, **Attachment A**. At a minimum, the MRP Plan shall include the following elements:

1. Description of the Watershed including characteristics relevant to the monitoring;
2. Summary of the historical data and on-going monitoring;
3. Description of Monitoring Phases;
4. Monitoring sites;
5. Land Use description;
6. Sampling locations;
7. Detailed maps showing the land use and sampling locations;
8. Monitoring periods including monitoring events and frequencies of monitoring during each event;

9. Monitoring parameters;
10. parameters to be monitored including minimum and site specific requirements as described here;
11. A QAPP consistent with the requirements described in **Attachment A**;
12. Documentation of monitoring protocols including sample collection methods and laboratory quality assurance manual;
13. Laboratory Quality Assurance manual must describe analytical methods; internal quality control (QC) samples, frequency of QC sample analyses and acceptance criteria; calibration procedures and acceptance criteria; instrumentation and, other technical capabilities of the laboratory; and
14. Watershed contact information.

C. Annual Monitoring Report **Due: Annual, 1 ~~March~~ April**

The Annual Monitoring Report (AMR) shall be prepared after field monitoring events have been completed and includes a review of the monitoring program including the results of the data collected and data evaluation. The AMR shall include the following components:

1. Title page;
2. Table of contents;
3. Description of the watershed
4. Monitoring objectives;
5. Sampling site descriptions;
6. Location map of sampling sites and land use;
7. Tabulated results of analyses;
8. Sampling and analytical methods used
9. Copy of chain of custodies;
10. Associated laboratory and field quality control samples results;
11. Summary of precision and accuracy;
12. Pesticide Use Information;
13. Data interpretation including assessment of data quality objectives;
14. Summary of management practices used;
15. Actions taken to address water quality impacts identified, including but not limited to, revised or additional management practices to be implemented;
16. Communication Report; and
17. Conclusions and recommendations.

Copies of all field documentation and laboratory original data must be included in the annual monitoring report as attachments. The AMR should also provide a perspective of the field conditions including a description of the weather, rainfall, temperature, stream flow, color of the water, odor, and other relevant information that can help in data interpretation.

In reporting monitoring data, the Coalition Groups shall arrange the data in tabular form so that the required information is readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the Waiver.

A transmittal letter shall accompany each report. This letter shall include a discussion of any violations of the Waiver found during the reporting period, and actions taken or planned for correcting noted violations, such as operational, field or facility modifications. If the Coalition Group has previously submitted a Communication Report describing actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall be signed and contain a penalty of perjury statement by the Coalition Group, or the Coalition Group's authorized agent. This statement shall state:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for violations."*

The Regional Board may request Coalition Groups and/or individual Dischargers to take additional actions if monitoring data indicates the water quality objectives are exceeded in surface waters.

Based on results of the monitoring program after a minimum of one year, the Coalition Group may submit a revised MRP Plan requesting a reduction in the constituents monitored and/or sample frequency. If such reductions are warranted, the MRP may be revised by the Executive Officer.

The Coalition Group, on behalf of the individual member dischargers, shall implement the above monitoring program as of the date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____
(Date)

Attachment A – Quality Assurance Project Plan (no changes proposed)